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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/628,748	07/28/2003	Young-Kai Chen	100.2485	4860

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PRIEST & GOLDSTEIN PLLC
5015 SOUTHPARK DRIVE
SUITE 230
DURHAM, NC 27713-7736

EXAMINER

RAO, SHRINIVAS H

ART UNIT	PAPER NUMBER
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2814

DATE MAILED: 07/26/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/628,748

Applicant(s)

CHEN ET AL.

Examiner

Steven H. Rao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,6-15 and 18-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1,3,6-15, 18-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Amendment

Applicants' amendment filed on May 18, 2005 has been entered and forwarded to the Examiner on May 27, 2005.

Claims 1,6-9,14 and 15 have been amended.

Claims 2,4-5, and 16-17 have been cancelled.

Claims 21 and 22 have been added.

Therefore claims 1,6-9, 14 and 15 as amended and claims 21-22 (presently newly added) are currently pending in the Application.

Information Disclosure Statement

No further IDS have been filed after the one filed on December 16, 2004 (which was initially filed on October 30, 2003 and considered and the initialed PTO-1449 enclosed with the O/A mailed on December 16, 2004).

Claim Rejections - 35 USC Section 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action'.

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-15 and 18-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Miles et al. (U.S. Patent N0.6,384,463, herein after Miles) and in view of Keri (U.S. Patent No. 5,861,656, herein after Keri).

With respect to claim 1 Miles describes a microelectronic apparatus having protection against high frequency cross talk radiation, comprising a planar insulating substrate, (Miles col. 1 lines 33-35, and col. 2 lines 60-63 it is noted that planar and insulating are defined in for e.g. at least in Specification page 8 lines 5 to 14 and insulating means reduced capability to conduct electrons and holed which any undoped semiconductor layer like Miles layer described in col. 1 lines 33-35 will satisfy) an active semiconductor electronic device located over a first region of said insulating substrate, (Miles fig. I #2 or 4, col. 2 lines 30-35). Miles describes a doped semiconductor (eg. figure 4 #22) without specifically describe the doped semiconductor as substantially surrounding the first region (insulating substrate) .

However Keri , a patent from the same filed of endeavor , describes in figure 3 and col. 2 lines 38 to 49 the doped semiconductor as substantially surrounding the insulating substrate to avoid rather complicated and extra circuit area and/ or processing steps in connection with manufacture but rather provide a simple manner with reduced number of steps so as to protect devices in high voltage integrated circuits.

Therefore it would have been obvious to one of ordinary skill in the art at

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the time of the invention to include Keri's 49 the doped semiconductor as substantially surrounding the insulating substrate in the place of Miles doped semiconductor . The motivation to make the above substitution is to avoid rather complicated and extra circuit area and/ or processing steps in connection with manufacture but rather provide a simple manner wit reduced number of steps so as to protect devices in high voltage integrated circuits.

The remaining limitations of claim 1 are :

A second active semiconductor electronic device located over a third region of said insulating substrate , said third region being substantially separated from said first region by said second region (Miles col. 1 lines 18-19).and dissipative conductor overlying and adjacent to said doped semiconductor absorber (Miles figure 3 # 6 overlying and adjacent 8, Keri figure 3 #24 over and adjacent 14, 16) wherein said semiconductor absorber and dissipative conductor are capable of dissipating cross talk radiation having a center frequency within a range of between about 1 gigahertz and about 1,000 gigahertz.

The limitation," wherein said semiconductor absorber and dissipative conductor are capable of dissipating cross talk radiation having a center frequency within a range of between about 1 gigahertz and about 1,000 gighertz. " is taken to be a recitation of mere function or property inherently possessed by things in the prior art .

Further " it is elementary that mere recitation of a newly discovered function or property , inherently possessed by things in the prior art, does not cause a claim drawn to distinguish over the prior art. Additionally, where the Patent Office has reason to believe

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that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may, in fact be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.' In re Swine heart, 169 USPQ 226 (CCPA 1971).

With respect to claim 3 Miles describes the microelectronic apparatus of claim 1, in which said doped semiconductor absorber fills a trench located in said second region. (Keri figures 1-4, #14,16,etc., Miles figure 3 # 8 in trench between trenches 16).

With respect to claim 6 Miles describes the microelectronic apparatus of claim 1, in which said doped semiconductor absorber comprises an n type semiconductor dopant.. (Miles col.3 lines 54-55).

With respect to claim 7 Miles describes the microelectronic apparatus of claim 1, further comprising a dielectric passivation layer having a first surface overlaying said insulating substrate and having a second surface, (Miles figures 3, 4 #16, Keri figures 18) said dielectric passivation layer having a thickness extending between said first and second surfaces; (inherent property of every layer to have a thickness) said dissipative conductor extending into said dielectric passivation layer. (Miles figure 3 # 8, Keri figures 14, 16 extending into 18)

With respect to claim 8 Miles describes the microelectronic apparatus of claim 1,

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in which the dissipative conductor is a metal selected from the group consisting of nickel, chromium, palladium, platinum and alloys thereof (Miles ring 6, col.2 line 44, Keri layer 24, col. 2 lines 50-51).

With respect to claim 9 Miles describes the microelectronic apparatus of claim 1, in which said first and second active semiconductor electronic devices are selected from the group consisting of transistors, circuits, integrated circuits, diodes, and memory cells. (Miles col. 1 line 17-18, Keri col. 1 lines 6-7-i/cs, transistors).

With respect to claim 10 Miles describes the microelectronic apparatus of claim 7, in which said dissipative conductor fills a trench located in said dielectric passivation layer. (Miles figure 3 #8 between dielectric layers 16. , Keri figure 3 # 14,16 in trenches in passivation dielectric layer 18)

With respect to claim 11 Miles describes the microelectronic apparatus of claim 7, in which said dissipative conductor extends from said first surface toward said second surface over at least about half of said thickness the first and the second semiconductor substrates to be in different in their crystal plane orientation to increase stability of the device increase productivity and enhance mechanical and electronic properties of the surface .

With respect to claim 12 Miles describes the microelectronic apparatus of claim 7, further comprising: metallic test probe contacts located at said second surface, said metallic test probe contacts making electrical connections with said active semiconductor electronic device. (Miles col. 2 lines 36-37)

With respect to claim 13 describes the microelectronic apparatus of claim 11 1, in

which said dissipative conductor extends from said first surface to said second surface. the first and the second semiconductor substrates to be in different in their crystal plane orientation to increase stability of the device increase productivity and enhance mechanical and electronic properties of the surface .

With respect to claim 14 describes a method of making a microelectronic apparatus having protection against high frequency crosstalk radiation, comprising the steps of: providing a planar insulating substrate forming an active semiconductor electronic device located over a first region of said insulating substrate, and forming a doped semiconductor absorber located in a second region of said insulating substrate substantially surrounding said first region. (Miles figure 3). A second active semiconductor electronic device located over a third region of said insulating substrate , said third region being substantially separated from said first region by said second region (Miles col. 1 lines 18-19).and dissipative conductor overlying and adjacent to said doped semiconductor absorber (Miles figure 3 # 6 overlying and adjacent 8, Keri figure 3 #24 over and adjacent 14, 16) wherein said semiconductor absorber and dissipative conductor are capable of dissipating cross talk radiation having a center frequency within a range of between about 1 gigahertz and about 1,000 gighertz.

The limitation," wherein said semiconductor absorber and dissipative conductor are capable of dissipating cross talk radiation having a center frequency within a range of between about 1 gigahertz and about 1,000 gighertz. " is taken to be a recitation of mere function or property inherently possessed by things in the prior art .

Further ' it is elementary that mere recitation of a newly discovered function or property , inherently possessed by things in the prior art, does not cause a claim drawn to distinguish over the prior art. Additionally, where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may , in fact be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove that the subject matter shown to be in the prior art does not possess the characteristic relied on.' In re Swine heart , 169 USPQ 226 (CCPA 1971).

With respect to claim 15 Miles describes the method of claim 14, in which said doped semiconductor absorber is formed by the step of implanting dopant ions in a trench located in said second region. (Keri figures 1-4, #14,16,etc., Miles figure 3 # 8 in trench between trenches 16).

With respect to claim 18 Miles describes the method of claim 14, further comprising the step of: forming a dielectric passivation layer having a first surface overlaying said insulating substrate and having a second surface; (Miles figures 3, 4 #16, Keri figures 18) said dielectric passivation layer having a thickness extending between said first and second surfaces; (inherent property of every layer to have a thickness extending between its two surfaces) said dissipative conductor extending into said dielectric passivation layer. (Miles figures 3,4 etc.).

With respect to claim 19 Miles describes the method of claim 18, in which said dissipative conductor is formed by the steps of: providing a trench located in said dielectric passivation layer, (Miles col. 3 lines 66-67, Keri figures and col.2 lines 22-30)

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and filling a dissipative conductor into said trench. (Miles figures 8 filled in trench col. 3 lines 66-67 and Keri figures and col. 2 lines 22-30)

With respect to claim 20 Miles describes the method of claim 18, further comprising the step of: forming metallic test probe contacts located at said second surface, (Miles ring 6, col. 1.2 line 44, Keri layer 24, col. 2 lines 50-51) said metallic test probe contacts making electrical connections with said active semiconductor electronic device. (Miles figure 3 and Keri figure 3, col. 3 lines 20-25).

With respect to claims 21 and 22 Miles describes the micro electronic apparatus of claim 1/14 in which the dissipative conductor has a sheet resistance within the range of about 10 ohms per square and about 500 ohms per square.

Response to Arguments

Applicant's arguments filed on May 18, 2005 have been fully considered but they are not persuasive for the following reasons :

Applicants' contentions that Miles does not teach /suggest a semiconductor absorber and a dissipative conductor that are capable of dissipating crosstalk radiation having a center frequency within a range of between about 1 gigahertz and about 1,000 gigahertz is not persuasive because it is well settled law that, ' it is elementary that mere recitation of a newly discovered function or property , inherently possessed by things in the prior art, does not cause a claim drawn to distinguish over the prior art. Additionally, where the Patent Office has reason to believe that a functional limitation asserted to be critical for establishing novelty in the claimed subject matter may , in fact be an inherent characteristic of the prior art, it possesses the authority to require the applicant to prove

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that the subject matter shown to be in the prior art does not possess the characteristic relied on. In re wine heart , 169 USPQ 226 (CCPA 1971).

Applicants' first argument that Miles (assuming applicants' some how overcome the above requirement) fails to disclose /suggest a doped semiconductor absorber is not persuasive because Miles in figure 4 # 22, etc. describes a doped semiconductor and in col. 3 lines 54-55 describes a n doped semiconductor identical to Applicants n doped semiconductor, further the same material (n doped semiconductor) has as shown above has the same structure and used for the same purposes , therefore what is true for Applicants' (n doped semiconductor acting as an absorber) is also true for the Miles reference.

Applicants' second contention (assuming applicants' some how overcome the above requirement) that Miles does not teach a (metal) dissipative conductor is similarly not persuasive because claim 1 presently recites " dissipative conductor" and Miles in col..2 line 44 and Keri in col. 2 lines 50-51 both describe metal conductor i.e. further the same material (metal conductor) as shown above having the same structure and used for the same purposes , therefore what is true for Applicants' (metal conductor acting as a dissipater) is also true for the Miles reference.

Applicants' contention that the applied secondary Keri reference fails to disclose /suggest a doped semiconductor absorber and a dissipative conductor is not persuasive because the applied primary reference (Miles) describes/suggests both a doped semiconductor absorber and a dissipative conductor a shown and it is not necessary for

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the secondary reference also to repeat the teachings (a doped semiconductor absorber and a dissipative conductor) already taught by the primary reference.

Further Applicants' above analysis is improper as being based upon piecemeal attacks on references prohibited by *In re Keller*, 208 USPQ 871 (CCPA 1981).

Therefore all of Applicants' arguments are found to be not persuasive .

Therefore claims 1 and 14 are finally rejected.

Dependant claims 3,6-13,15 and 18 were alleged to be allowable because of their dependency upon allegedly allowable independent claims 1 and 14, however as shown above independent claims 1 and 14 are not allowable and therefore dependent claims 3, 6-13, 15 and 18 are also not allowable.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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Any inquiry concerning this communication or earlier communication from the examiner should be directed to Steven H. Rao whose telephone number is (571) 272-1718 . The examiner can normally be reached on Monday- Friday from approximately 7 : 00 a . m . to 5: 30 p . m .

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0956. The Group facsimile number is (703) 308-7724.

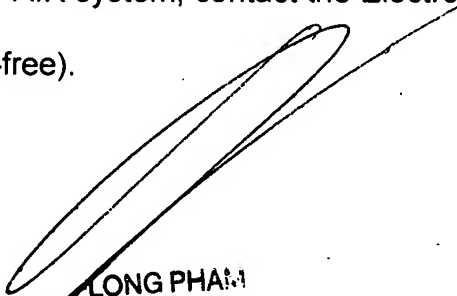
Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Steven H. Rao

Patent Examiner

July 19, 2005.



LONG PHAM
PRIMARY EXAMINER